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FEDERAL COMMUNICATIONS COMMISSION  
OFFICE OF SECRETARY



P.O. Box 2301  
Cincinnati, OH 45201-2301

October 19, 1995

Mr. William F. Caton, Secretary  
Federal Communications Commission  
1919 M Street, N.W., Room 222  
Washington, D.C. 20554

DOCKET FILE COPY ORIGINAL

**Re: CC Docket No. 94-97, Phase II**

DOCKET FILE COPY ORIGINAL

Dear Mr. Caton:

On behalf of Cincinnati Bell Telephone Company (CBT), I have enclosed the Direct Case of CBT filed in response to the Common Carrier Bureau's Order Designating Issues for Investigation, CC Docket No. 94-97, Phase II, DA 95-2001, released on September 19, 1995.

As in Phase I of this proceeding, the Bureau has required CBT to furnish disaggregated investment and expense information for its DS1 and DS3 access services. The requested information must be furnished at an unusually high level of detail. Disclosure of the disaggregated information would cause substantial harm to CBT's competitive position and CBT would not customarily release this information to the public. Indeed, CBT maintains this information in locked files and access to the information is strictly limited. In Phase I, the Bureau recognized "that a competitor's use of information contained in CBT's submission has the potential of causing significant competitive harm to CBT." See letter from Kathleen M.H. Wallman to John L. McGrew dated August 11, 1995, DA 95-1788. That same risk of substantial competitive harm is present in Phase II of this proceeding.

Because of the confidential nature of the requested information, CBT is providing two versions of its Direct Case. The enclosed version contains information for release to the public.<sup>1</sup> The public version is sufficient to permit interested parties to evaluate CBT's virtual collocation tariff, but does not reveal confidential information. A second version, labeled "Confidential Version," and forwarded in a sealed envelope addressed to the Chief, Tariff

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<sup>1</sup>The data submitted with the enclosed version assumes a typical end-to-end service with 1 channel termination, 2 channel mileage terminations and 6.8 channel miles. These assumptions are identical to those required by the Chief, Tariff Division, Common Carrier Bureau in his March 11, 1994 letter to CBT (reference no. 1600C1) and in the public version of CBT's Direct Case in Phase I of this proceeding.

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Division, Common Carrier Bureau, contains the confidential information which CBT requests that the Commission withhold from public inspection pursuant to 47 C.F.R. Sections 0.457 and 0.459.

If anyone other than an employee of the Commission requests an opportunity to inspect the Confidential Version of the Direct Case, please notify CBT in advance of any such disclosure so that we may take appropriate measures to maintain the confidentiality of the information.

Please date stamp and return the duplicate of this notice to confirm your receipt of this filing. Questions regarding this matter should be directed to Charles A. Margolen at the above address or by calling (513) 397-1339.

Sincerely,

A handwritten signature in black ink, appearing to read "Charles A. Margolen", with a stylized, looping flourish at the end.

Charles A. Margolen  
Integrated Corporate Planning - Access Services

Enclosure

**BEFORE THE  
FEDERAL COMMUNICATIONS COMMISSION  
WASHINGTON, D.C. 20554**

In the Matter of	)	
	)	
Local Exchange Carriers' Rates, Terms, and Conditions for Expanded Interconnection Through Virtual Collocation for Special Access and Switched Transport	) ) ) ) )	CC Docket No. 94-97, Phase II

**DIRECT CASE OF CINCINNATI BELL TELEPHONE COMPANY**

On July 25, 1994, the Commission released its Memorandum Opinion and Order in CC Docket No. 91-141 adopting virtual collocation as the basic architecture for providing expanded interconnection service.<sup>1</sup> The Virtual Collocation Order required Cincinnati Bell Telephone Company (CBT), and other Tier 1 local exchange carriers (LECs) other than NECA pool members to file tariffs offering expanded interconnection for special access and switched access transport services through virtual collocation arrangements.<sup>2</sup> CBT filed Transmittal No. 662 on September 1, 1994 in compliance with the Virtual Collocation Order. On September 2, 1994, the Common Carrier Bureau (Bureau) suspended CBT's and the other LECs' virtual collocation tariffs for one day, permitted the tariffs to take effect subject to an accounting order, and initiated an investigation.

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<sup>1</sup>Expanded Interconnection with Local Telephone Company Facilities, Memorandum Opinion and Order, CC Docket No. 91-141, 9 FCC Rcd 5154 (1994) (Virtual Collocation Order), appeal pending sub nom., Southwestern Bell Telephone Company v. F.C.C., No. 94-1547 (D.C. Cir., Aug. 10, 1994).

<sup>2</sup>Virtual Collocation Order at para. 36.

On February 28, 1995, the Bureau released its Order Designating Issues For Investigation in the first phase of the Bureau's investigation of the LECs' virtual collocation tariffs.<sup>3</sup> The Phase I Designation Order designated for investigation whether CBT's and the other LECs' overhead loadings for virtual collocation were justified. In its Report and Order released May 11, 1995, the Commission affirmed the Bureau's conclusion that "CBT's overhead loadings appear to comport with this Commission's overhead loading standard."<sup>4</sup> Accordingly, CBT was one of only two LECs who was not required to reduce its overhead loading levels.

On September 19, 1995, the Bureau released its Phase II Designation Order in this docket.<sup>5</sup> In Appendix A attached hereto, CBT addresses the issues raised in the Phase II

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<sup>3</sup>Local Exchange Carriers' Rates, Terms, and Conditions for Expanded Interconnection Through Virtual Collocation for Special Access and Switched Transport, Order Designating Issues For Investigation, CC Docket No. 94-97, Phase I, DA 95-374, 10 FCC Rcd 3927 (1995).


<sup>4</sup>Local Exchange Carriers' Rates, Terms, and Conditions for Expanded Interconnection Through Virtual Collocation for Special Access and Switched Transport, Report and Order, CC Docket No. 94-97, Phase I, FCC 95-200, 10 FCC Rcd 6375 (1995), at para. 97.

<sup>5</sup>Local Exchange Carriers' Rates, Terms, and Conditions for Expanded Interconnection Through Virtual Collocation for Special Access and Switched Transport, Order Designating Issues For Investigation, CC Docket No. 94-97, Phase II, DA 95-2001 (released September 19, 1995) (Phase II Designation Order).

Designation Order to the extent they relate to CBT's Transmittal No. 662 and demonstrates that CBT's virtual collocation tariff is just and reasonable.

Respectfully submitted,

FROST & JACOBS

By: 

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Attorneys for Cincinnati Bell  
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Dated: October 19, 1995

0242741.02

**ISSUES DESIGNATED FOR INVESTIGATION**

In the Phase II Designation Order, the Bureau designated three broad issues for investigation. The issues relate to the direct cost components of the LECs' virtual collocation rates, as well as the LECs' rate structures and terms and conditions for virtual collocation service. The following responses to the issues designated for investigation should be read in conjunction with the "Information Requirements" of the Phase II Designation Order.

**Issue A: Are the direct cost components of the LECs' virtual collocation rates justified?**

**1. Charges for Provision of Interconnector-Designated Equipment**

The Bureau has requested information from CBT on several issues relating to the direct costs of providing virtual collocation. In paragraph 21 of the Phase II Designation Order, the Bureau requests information regarding methodologies for computing equipment rates. CBT responds to such requests as follows:

21(a): CBT's methodology for computing rates for interconnector-designated equipment is as follows: CBT takes the actual amount it paid for the particular equipment and adds the cost of engineering, installing and provisioning the equipment. This methodology does not change for different interconnectors. Accordingly, the rates paid by all interconnectors are derived in the same manner. The cost of different types of equipment varies according to the manufacturer. The cost of engineering, installing and provisioning equipment also varies based on the type of equipment. Interconnectors that wish to sell equipment to the LECs will know their sale price. Interconnectors that wish to designate equipment not previously tariffed can predict their equipment costs by contacting the manufacturer of the equipment and asking for the standard sale price. An estimate of the time required for engineering and installing the equipment can also be obtained from the equipment manufacturer. Upon request, CBT will provide prospective interconnectors with an estimate of the engineering, installation and provisioning costs of interconnector-designated equipment.

21(b): CBT's procedure for determining the "lowest reasonably available purchase price" of interconnector-designated equipment is as follows: First, CBT will ask the interconnector whether and at what price the interconnector will sell the equipment to CBT. Secondly, if the interconnector-designated equipment is the same type of equipment used in CBT's network, then CBT will determine the price from its usual source (including any applicable discounts). If the interconnector-designated equipment is not used in CBT's network, then CBT will obtain a price quote from the equipment manufacturer. The lower of the interconnector's price and the manufacturer's price (including any applicable discounts) will be the value used to calculate CBT's nonrecurring equipment charge. The vendor prices used to determine the equipment charge reflect equipment price only without any additional mark-up. CBT adds its cost of engineering and installing the equipment to determine the nonrecurring equipment charge.

If an interconnector offers to sell CBT the desired equipment at a price lower than that upon which the tariffed equipment rate is based, then the equipment rate will be computed based on the lower price. Because the interconnector's offer to sell equipment to CBT is only a one-time offer, the tariffed rate for the type of equipment designated by the interconnector will not be reduced to the interconnector's price.

21(c): CBT had only one interconnector for physical collocation. CBT is negotiating with that interconnector to purchase the equipment for a nominal price.

21(d): CBT applies the same annual cost factors to direct investment when the interconnector designates the same type of equipment that CBT uses in a given central office as when an interconnector designates a different type of equipment.

21(e): At the time CBT furnished its sample price outs, CBT had only one request for expanded interconnection. That interconnector requested DS3 virtual collocation service. CBT used the type of transmission equipment requested by that interconnector as the basis for its DS3 virtual collocation sample price out. Because CBT had no requests to tariff DS1 equipment for virtual collocation, CBT used the type of equipment that CBT uses to furnish DS1 service as the basis for its DS1 virtual collocation sample price out.

21(f): CBT's tariff states that financial arrangements will be determined on a case-by-case basis. See Section 17.11.4(O). CBT is not opposed to purchasing interconnector-designated equipment from the interconnector, however CBT does not intend to enter into repurchase arrangements with interconnectors. Pursuant to paragraph 127 of the Virtual Collocation Order, LECs are not required to offer sale/repurchase arrangements.

## **2. Provisioning Charges**

In paragraph 42 of the Phase II Designation Order, the Bureau requests information regarding the provisioning charges for virtual collocation service and for comparable DS1 and DS3 services. CBT responds to such requests as follows:

42(a): CBT has no separate provisioning charges (i.e., charges for service order processing and design engineering) for either DS1/DS3 service or virtual collocation service.

42(b): CBT recovers provisioning costs associated with DS1 and DS3 services through overhead loadings, not through separate charges. See CBT F.C.C. Tariff No. 35 Sections 6.5 and 7.5, indicating no separate provisioning charges.

## **3. Charges for Power to Interconnector-Designated Equipment**

In paragraph 46 of the Phase II Designation Order, the Bureau requests that LECs provide certain information regarding the costs of providing power to interconnector-designated equipment. CBT responds to such requests as follows:

46(a): CBT recovers the cost of providing power to interconnector-designated equipment through direct assignment to the equipment bay rate element. These costs include the cost of DC power required by the interconnector-designated equipment plus a portion of the cost of emergency power equipment that benefits interconnector-designated equipment. The DC power cost is directly assigned to the interconnector-designated equipment based on the number of amps required for the equipment. For emergency power, a ratio of the total emergency power investment to the total amount of usable floor space is developed. The emergency power cost is then assigned to the interconnector-designated equipment based on the number of square feet of floor space used by the interconnector-designated equipment.

46(b): CBT also recovers power costs in its rates for DS1 and DS3 services. In this case, a ratio of CBT's central office investment to total power investment is developed. This ratio is then used to assign power costs based on the amount of central office investment used by a particular service. See CBT F.C.C. Tariff No. 35 Sections 6.5 and 7.5, indicating no separate power charges.

46(c): CBT has not established separate power rate elements for either virtual collocation service or DS1 and DS3 services.

#### **4. Charges for Floor Space**

In paragraph 52 of the Phase II Designation Order, the Bureau requests that LECs provide certain information regarding recovery of floor space costs. CBT responds to such requests as follows:

52(a): CBT recovers land and building costs for virtual collocation through direct assignment to the equipment bay rate element. A ratio of land and building investment per usable square foot is developed. This ratio is then used to assign land and building costs to the interconnector-designated equipment based on the number of square feet used by the equipment.

52(b): CBT also recovers land and building costs for its DS1 and DS3 services. In this case, ratios of CBT's central office investment to total land and building investments are developed. The ratios are then used to assign land and building costs based on the amount of central office investment used by a particular service. See CBT F.C.C. Tariff No. 35 Sections 6.5 and 7.5, indicating no separate floor space charges.

52(c): CBT has not established separate floor space rate elements for either virtual collocation service or DS1 and DS3 services.

#### **5. Cost of Money Factors**

In paragraph 55 of the Phase II Designation Order, the Bureau requires the LECs to provide the cost of money factor used for their virtual collocation services and for their comparable DS1 and DS3 services.



CBT uses the same method to calculate the cost of money factors for virtual collocation services and for comparable DS1 and DS3 services for the same class of plant. The cost of money factor is the ratio of CBT's cost of money to the associated investment. A separate cost of money factor is determined for each class of plant because different classes of plant have different depreciation characteristics. The following table provides the cost of money factors for the various classes of plant used to provide virtual collocation. In each case, CBT used an interest rate of 11.25% per annum and a time period of 3 years for computing the present discounted value.

<u>Account</u>	<u>Class of Plant</u>	<u>Depreciable Life (yrs.)</u>	<u>Virtual Collocation Cost of Money Factor</u>
2111	Land	none	10.65%
2232.11	Digital Circuit Equipment	10.5	8.30%
2411	Poles	29	9.76%
2421.12	Aerial Fiber Cable	25	9.58%
2422.12	Underground Fiber Cable	25	9.72%
2423.12	Buried Fiber Cable	25	9.80%
2426.2	Intrabuilding Fiber Cable	20	9.44%
2441	Conduit	50	10.02%

The following table provides the average depreciable lives and cost of money factors for the various classes of plant used to provide CBT's DS1 and DS3 services. This information differs from the depreciable lives and cost of money factors for virtual collocation because the cost data was developed at different times. The annual charge factors are therefore somewhat different. In addition, because CBT had a depreciation represcription between the cost study for DS1/DS3 and the cost study for virtual collocation, there is a slight change in the depreciable lives and the cost of money factors. CBT used the same 11.25% per annum and a time period of 3 years for computing the present discounted value.

<u>Account</u>	<u>Class of Plant</u>	<u>Average Depreciable Life (yrs.)</u>	<u>DS1/DS3 Cost of Money Factor</u>
2111	Land	none	10.65%
2232.11	Digital Circuit Equipment	11	8.49%
2411	Poles	32	9.50%
2421.12	Aerial Fiber Cable	25	9.78%
2422.12	Underground Fiber Cable	30	9.77%
2423.12	Buried Fiber Cable	25	9.79%
2426.2	Intrabuilding Fiber Cable	20	9.53%
2441	Conduit	55	10.04%

## 6. Completion of Direct Cost Information Charts

In paragraph 56 of the Phase II Designation Order, the Bureau requires the LECs to complete the Direct Cost Information Charts in Appendix C to the Order for the following

services: DS1 virtual collocation service, DS3 virtual collocation service, the comparable DS1 service with the lowest overhead loading, and the comparable DS3 service with the lowest overhead loading. Attached hereto are CBT's completed Direct Cost Information Charts.

**Issue B: Are the rate structures established in the virtual collocation tariffs justified?**

**1. Nonrecurring Charges for Interconnector-Designated Equipment**

The Bureau has requested information from CBT on several issues relating to the rate structure established in its virtual collocation tariff. In paragraph 63 of the Phase II Designation Order, the Bureau requests information regarding nonrecurring charges for interconnector-designated equipment. CBT responds to such requests as follows:

63(a): CBT imposes a nonrecurring charge to recover the cost of interconnector-designated equipment because of the substantial risk of stranded investment if the interconnector terminates its collocation service before the equipment cost is recovered. CBT offers virtual collocation on a month-to-month basis. If the interconnector terminates service after only a few months of service, it is unlikely that a recurring charge would have recovered the cost of the interconnector-designated equipment. CBT's other ratepayers would be forced to bear the cost of the stranded investment. This risk is heightened if the equipment is not of a type already used in CBT's network.

The Bureau has requested CBT to justify its procedures for disposition of the interconnector-designated equipment after termination of the virtual collocation arrangement. CBT has established no special procedures with respect to the disposition of equipment used to provide virtual collocation. Under the Virtual Collocation Order, interconnector-designated equipment is designated by the interconnector, but it is owned by the LEC. CBT will dispose of interconnector-designated equipment consistent with its disposition of other CBT equipment.

63(b): CBT did not develop its nonrecurring virtual collocation charges based on the net present value of recurring annual expenses.

63(c): CBT recovers the costs of circuit equipment used for DS1 and DS3 services through recurring charges. Because the equipment deployed for DS1 and DS3 services is not dedicated to one customer, the risk of stranded investment is substantially lower. If a DS1 or DS3 customer terminates service, CBT will still be able to recover the cost of the equipment from its other DS1 or DS3 customers. As explained above, if a virtual collocation customer terminates service CBT may well have stranded investment, especially if the type of equipment is not otherwise deployed in CBT's network.

## **2. Charges for Training**

In paragraph 70 of the Phase II Designation Order, the Bureau requests that LECs provide certain information regarding charges for training expenses. CBT responds to such requests as follows:

70(a): CBT does not charge an averaged per diem charge for training expenses.

70(b): A direct pass through of training expenses is reasonable because it follows cost-causation principles and ensures that interconnectors bear only those expenses actually incurred. CBT does not oppose permitting interconnectors to pay third parties directly for airline and other training expenses.

70(c): CBT's rate structure avoids double recovery of training costs. If CBT does not use the interconnector-designated equipment in its network, the interconnector must bear the training costs. If CBT already uses the interconnector-designated equipment in its network, or if CBT has already been trained to service the interconnector-designated equipment, then the interconnector bears no additional training costs. Because of the administrative burden of giving full or partial refunds, no refund is provided if a subsequent interconnector designates the same equipment or if CBT subsequently acquires the interconnector-designated equipment for use in its own network.

70(d): It is reasonable to compare the costs of training LEC personnel to service DS1 and DS3 equipment as a general guideline for estimating interconnector training expenses. Because the equipment to provide interconnection and the equipment to provide DS1/DS3 service (as well as the engineering, installation, and provisioning of the equipment) are not always comparable, the comparison should be used as a general guideline only.

70(e): CBT did not file an average rate to recover airline expenses associated with training.

## **3. Clarification of Training Provisions**

In paragraph 74 of the Phase II Designation Order, the Bureau requests that LECs provide certain information clarifying their tariffs' training provisions. CBT responds to such requests as follows:

74(a): In Section 17.11.8(C) of its virtual collocation tariff, CBT specifies that training charges apply only "if the designated equipment is different from the equipment the Telephone Company uses in the particular Wire Center." Upon request, CBT will furnish a prospective interconnector with a list of the types of transmission equipment deployed in CBT's network that are used for virtual collocation or DS1/DS3 service.

74(b): Because CBT serves a much smaller geographic area than most Tier 1 LECs, CBT's technicians are trained on a network-wide, rather than a per central office, basis. When CBT

deploys equipment not previously used in its network, CBT trains technicians to monitor the equipment, as well as repair it. A minimum of 12 technicians (4 per shift) who work in CBT's Network Operations Center are trained to monitor the equipment. An additional minimum of 24 technicians (8 per shift) are trained to maintain and repair the equipment in CBT's central offices. CBT would apply these same training requirements for interconnector-designated equipment that is not already deployed in CBT's network. Accordingly, a minimum of 36 technicians would need to be trained. This minimum number of technicians is reasonable to ensure that technicians are available to provide 24-hour, 7 day-a-week service to monitor, maintain and repair interconnector-designated equipment.

74(c): CBT employs a variety of training methods, including formal training at the equipment manufacturer's location, formal in-house training, and informal training from supervisors and others. CBT's training methods would not differ simply because the equipment was dedicated to providing virtual collocation service.

**Issue C: Are the terms and conditions in the virtual collocation tariffs unreasonable?**

**1. Use of Outside Contractors for Installation, Maintenance and Repair of Interconnector-Designated Equipment**

The Bureau has requested information from CBT regarding whether the terms and conditions of CBT's virtual collocation tariff are reasonable. In paragraph 88 of the Phase II Designation Order, the Bureau requests information regarding the use of outside contractors to install, maintain and repair interconnector-designated equipment. CBT responds to such requests as follows:

88(a): CBT does not use outside contractors to install, maintain or repair its equipment used to provide DS1 or DS3 service. Accordingly, CBT does not intend to permit outside contractors to install, maintain or repair interconnector-designated equipment that is used for virtual collocation. CBT's policies in this regard are consistent with paragraph 59 of the Virtual Collocation Order.

88(b): See response to paragraph 88(a) above.

88(c): See response to paragraph 88(a) above.

**2. Installation, Maintenance and Repair Intervals**

In paragraph 91 of the Phase II Designation Order, the Bureau requests that LECs provide certain information regarding installation, maintenance and repair intervals. CBT responds to such requests as follows:

91(a): Under Section 17.11.9(D) of CBT's virtual collocation tariff, CBT will install, maintain and repair interconnector-designated equipment to at least the same standards as CBT performs these functions for its comparable equipment. This tariff provision clearly complies with the Commission's requirement that LECs install interconnector-designated equipment under the same time intervals that apply to installation of comparable LEC equipment.

91(b): CBT believes it would not benefit interconnectors to tariff particular maintenance intervals, response times or restoration priorities. LECs own the interconnector-designated equipment and are required to install it and maintain it like their other equipment. Particular maintenance intervals, response times or restoration priorities (each of which may vary depending on the type of equipment involved) are not appropriate.

91(c): CBT does not offer service options, such as repair intervals, on its DS1 and DS3 services. Similarly, CBT does not offer service options on virtual collocation service.

### **3. LECs' Liability**

In paragraph 100 of the Phase II Designation Order, the Bureau requests that LECs provide certain information regarding provisions limiting LECs' liability. Section 17.11.11 of CBT's virtual collocation tariff governs liability and damages. CBT's limitations on liability contained in this section are consistent with the limitations on liability contained in Section 2 of the same tariff (which governs access services such as DS1 and DS3 services). Accordingly, the liability limitations for virtual collocation service are consistent with the liability limitations for DS1 and DS3 services.

### **4. Ordering and Billing Virtual Collocation Services**

In paragraph 102 of the Phase II Designation Order, the Bureau requests certain information from LECs that do not permit parties other than the interconnector to order and be billed for virtual collocation services. CBT does not prohibit parties other than the interconnector to order and be billed for virtual collocation services.

# **APPENDIX**

## **C**

## DIRECT COST INFORMATION CHARTS

CBT's Direct Cost Information Charts are attached hereto. These charts provide investments, annual charge factors, and expenses for the DS1 and DS3 virtual collocation services and for CBT's comparable DS1 and DS3 services. Additional explanations are provided herein regarding the annual charge factors and the derivation of expenses from the annual charge factors and investments.

CBT develops annual charge factors on an annual basis and uses these factors in all cost studies for a given year. Annual charge factors are developed for each class of plant, e.g. underground fiber, central office transmission equipment, land, etc. These factors differ by class of plant for many reasons. For example, each class of plant has different depreciation characteristics. This causes the depreciation component of the annual charge factor to differ between different classes of plant. Also, CBT incurs different maintenance expenses for each class of plant, thereby causing the maintenance component of the annual charge factor to differ by class of plant.

The services analyzed in the Direct Cost Information Charts use various equipment and plant facilities. The associated costs are derived by multiplying the appropriate annual charge factor for each class of plant by the associated investment in that class of plant. As an example, consider the Conduit Space investment shown as \$3.71 on Line 18 of Chart 1 - Investment and ACF Data of the DS1 VIRTUAL COLLOCATION TRP FUNCTION RATES AND PRICE ANALYSIS. The maintenance annual charge factor as shown on the same line of this chart is .0404. Multiplying these two amounts together and dividing by 12 to convert annual costs to a monthly costs, results in a

monthly cost of \$.01. This amount is shown on Line 18 of Chart 2 - Recurring and Nonrecurring Costs of the DS1 VIRTUAL COLLOCATION TRP FUNCTION RATES AND PRICE ANALYSIS. This example illustrates how costs are developed in the simplest case of only one type of investment.

Unlike the Conduit Space example, however, most services shown in the charts use more than one type of investment. The Direct Cost Information Charts do not separately list annual charge factors for each class of plant used in each service analyzed in these charts. Therefore, the annual charge factor components listed in these charts reflect the weighted average of the various class of plant annual charge factors. These weighted averages are unique to each service analyzed as each service has a unique combination of the various classes of plant. This is one reason why the annual charge factor components vary by service in these charts.

As an example, consider the Equipment Bay Charge on Line 36 Chart 1 - Investment and ACF Data of the DS1 VIRTUAL COLLOCATION TRP FUNCTION RATES AND PRICE ANALYSIS. There are three different types of investments associated with this service. These are related to Circuit Equipment, Land, and Building. The following table illustrates how the total depreciation cost and weighted annual charge factor were developed from the individual investments and their associated annual charge factors.



Class of Plant (A)	Depreciation Component of the ACF (B)	Investment (C)	Annual Depreciation (D)=(B)*(C)
Circuit Equipment	0.0925	\$881.20	\$81.51
Land	0	\$16.90	\$0.00
Building	0.0406	<u>\$652.62</u>	<u>\$26.50</u>
<b>TOTAL</b>		<b>\$1,550.72</b>	<b>\$108.01</b>

**Weighted ACF**                      **0.0696**  
 (= Total Depreciation /  
 Total Investment)

The weighted ACF calculated above is the same as that shown in Line 34 of Chart 1 - Investment and ACF Data of the DS1 VIRTUAL COLLOCATION TRP FUNCTION RATES AND PRICE ANALYSIS. This verifies that the costs were calculated correctly and illustrates how the charts will show different composite annual charge factors because the annual charge factor in the chart represents a weighted average annual charge factor.

Another reason for variations in the annual charge factors is that the charts request cost data for services whose cost studies were done at different points in time. For example, CBT provided its Comparable DS1 and DS3 services cost data from the last cost study that CBT performed for these services. This cost study was performed prior to the virtual collocation filing. As such, the Comparable DS1 and DS3 costs reflect prior annual charge factors.

Another area requiring explanation relates to services where investments are recovered through nonrecurring charges. Because CBT recovered some investment costs through one-time charges, there are no capital related costs associated with these investments. However, there are ongoing expenses such as maintenance associated with these investments. For example, investments related to the DS1 Plug-in are shown on Lines 44 and 60 of Chart 1 - Investment and ACF Data of the DS1 VIRTUAL COLLOCATION TRP FUNCTION RATES AND PRICE ANALYSIS. The total DS1 Plug-in investment is \$608.50 ( = \$69.64 + \$538.66). Since these investments are recovered through nonrecurring charges, these investments are shown on nonrecurring lines. However, the recurring maintenance cost associated with these investments is derived using the annual charge factor shown on line 36 - DS1 Termination - rec of the same chart. The maintenance annual charge factor shown here is .0492. When this annual charge factor is multiplied by the total investment of \$608.50 and divided by 12 to convert to monthly costs, the resulting maintenance cost is \$2.50 as shown on line 36 of Chart 2 - Recurring and Nonrecurring Costs of the DS1 VIRTUAL COLLOCATION TRP FUNCTION RATES AND PRICE ANALYSIS. This example illustrates that the correct costs are developed when all investments are used from the various lines in the charts. This is required due to the structure of these charts and to CBT's rate structure.

10/19/95

## APPENDIX C

**SAMPLE PRICE OUT CHART****DS3 EQUIPMENT****(Virtual Expanded Interconnection)****CINCINNATI BELL TELEPHONE CO. (CBT) - Cost of Providing 3 DS3s**

<b>1. Non-Recurring Charges (NRCs)</b>	<b>Rate</b>	<b>/3 Qty/DS3</b>	<b>Total Non-Recurring</b>
a. Cable Vault Splicing - Initial Splice	\$408.19	1	\$408.19
b. Cable Vault Splicing - Additional Splices	\$16.04	23	\$368.92
c. Splice Testing - Initial Splice	\$64.19	1	\$64.19
d. Splice Testing - Additional Splices	\$16.04	23	\$368.92
e. Cable Pull MH to Cable Vault - 1st 100 Feet	\$64.19	1	\$64.19
f. Cable Pull MH to Cable Vault - Add. 100 Fee	\$16.04	4	\$64.16
g. Equipment Bay	\$3,216.76	1	\$3,216.76
h. DS3 OLTm Equipment	\$48,839.10	1	\$48,839.10
i. DS3 OLTm Equip. Plug Ins	\$5,112.27	1	\$5,112.27
j. Test Equipment Modem	\$807.54	1	\$807.54
<b>Total NRCs For 3 DS3s</b>			<b>\$59,314.24</b>
<b>Equivalent Monthly Payment Over 5 years @ 11.25% Interest</b>			<b>\$1,297.04</b>

<b>2. Monthly Recurring Charges</b>	<b>Rate</b>	<b>/3 Qty/DS3</b>	<b>Total Monthly</b>
a. Conduct Space Per Duct Foot	\$0.15	500	\$75.00
b. Riser Cable Space Per Foot	\$18.64	250	\$4,660.00
c. Riser Cable & Termination	\$223.13	1	\$223.13
d. Equipment Bay	\$143.08	1	\$143.08
e. DS3 OLTm Equipment	\$1,074.95	1	\$1,074.95
f. DS3 OLTm Equip. Plug-Ins	\$112.52	1	\$112.52
g. DS3 Cross-Connect	\$65.20	3	\$195.60
<b>Total Recurring</b>			<b>\$6,484.28</b>
<b>Total Monthly Cost/ 3 DS3s</b>			<b>\$7,781.32</b>
<b>Monthly Cost per DS3</b>			<b>\$2,593.77</b>

**Assumptions:**

1. Each AT&T DDM2000, OC-12 has a capacity of 12 DS3s
2. 24 Fibers, Pre-Terminated.
3. DS3 OLTm Equip. Plug Ins comes in multiple of 6 DS3s

## APPENDIX C

**SAMPLE PRICE OUT CHART****DS1 EQUIPMENT****(Virtual Expanded Interconnection)****CINCINNATI BELL TELEPHONE CO. (CBT) - Cost of Providing 100 DS1s**

<b>1. Non-Recurring Charges (NRCs)</b>	<b>Rate</b>	<b>/100 Qty/DS1</b>	<b>Total Non-Recurring</b>
a. Cable Vault Splicing - Initial Splice	\$408.19	1	\$408.19
b. Cable Vault Splicing - Additional Splices	\$16.04	23	\$368.92
c. Splice Testing - Initial Splice	\$64.19	1	\$64.19
d. Splice Testing - Additional Splices	\$16.04	23	\$368.92
e. Cable Pull MH to Cable Vault - 1st 100 Feet	\$64.19	1	\$64.19
f. Cable Pull MH to Cable Vault - Add. 100 Fee	\$16.04	4	\$64.16
g. Equipment Bay	\$3,216.76	1	\$3,216.76
h. DS1 OLTM Equipment	\$34,836.92	2	\$69,673.84
i. DS1 OLTM Equip. Plug Ins (per 4 DS1s)	\$608.50	25	\$15,212.50
j. Test Equipment Modem	\$807.54	1	\$807.54
<b>Total NRCs For 100 DS1s</b>			<b>\$90,249.21</b>
<b>Equivalent Monthly Payment Over 5 years @ 11.25% Interest</b>			<b>\$1,973.51</b>

<b>2. Monthly Recurring Charges</b>	<b>Rate</b>	<b>/100 Qty/DS1</b>	<b>Total Monthly</b>
a. Conduct Space Per Duct Foot	\$0.15	500	\$75.00
b. Riser Cable Space Per Foot	\$18.64	250	\$4,660.00
c. Riser Cable & Termination	\$223.13	1	\$223.13
d. Equipment Bay	\$143.08	1	\$143.08
e. DS1 OLTM Equipment	\$766.65	2	\$1,533.30
f. DS1 OLTM Equip. Plug-Ins (per 4 DS1s)	\$13.39	25	\$334.75
g. DS1 Cross-Connect	\$11.34	100	\$1,134.00
<b>Total Recurring</b>			<b>\$8,103.26</b>
<b>Total Monthly Cost/100 DS1s</b>			<b>\$10,076.77</b>
<b>Monthly Cost per DS1</b>			<b>\$100.77</b>

**Assumptions:**

- Each Fujitsu FLM 150 ADM, OC-3 has a capacity of 84 DS1s, therefore two are required for 100 DS1s.
- 24 Fibers, Pre-Terminated.

**Public  
Version  
Exhibit A**

### DS1 SERVICE COST ANALYSIS

1 Channel Termination  
2 Channel Mileage Terminations  
6.8 Channel Miles

### CHART 1 - - Investment and ACF Data

## BY TRP FUNCTIONS

**Cincinnati Bell Telephone Company**

[illegible]

DS1 SERVICE COST ANALYSIS

1 Channel Termination  
2 Channel Mileage Terminations  
6.8 Channel Miles

CHART 1 - - Investment and ACF Data

BY TRP FUNCTIONS

Cincinnati Bell Telephone Company

	INVESTMENT Circuit Equip.	INVESTMENT 2 Fiber	INVESTMENT 3 Conduit	INVESTMENT 4 Land	INVESTMENT 5 Building	TOTAL INVESTMENT	Depreciation ACF	Cost of Money ACF	FIT ACF	Administrative ACF	Maintenance ACF	TOTAL ACF
	A	B	C	D	E	F	G	H	I	J	K	L
57 DS1 Equipment Installation -nrc												
58												
59												
60												
61												
62												
63 DS1 Equipment Installation -nrc total												
64												
65 DS1 Cross-Conn. -rec												
66	\$114.31	\$0.00	\$0.00	\$0.54	\$21.69	\$136.54	0.1049	0.0874	0.0602	0.1509	0.0540	0.4574
67												
68												
69												
70												
71 DS1 Cross-Conn. -rec total	\$114.31	\$0.00	\$0.00	\$0.54	\$21.69	\$136.54						
72												
73 DS1 Cross-Conn. -nrc												
74												
75												
76												
77												
78												
79 DS1 Cross-Conn. -nrc total												
80												
81 DS1 Maintenance & Repair -rec												
82												
83												
84												
85												
86												
87 DS1 Maintenance & Repair -rec total												
88												
89 DS1 Maintenance & Repair -nrc												
90												
91												
92												
93												
94												
95 DS1 Maintenance & Repair -nrc total												
96												
97 DS1 Technician Training -rec												
98												
99												
100												
101												
102												
103 DS1 Technician Training -rec total												
104												
105 DS1 Technician Training -nrc												
106												
107												
108												
109												
110												
111 DS1 Technician Training -nrc total												

Note: If A - E do not apply, fill in F and explain  
in attachment what is included in F.

[illegible]



CHART 2 - - Recurring and Nonrecurring Costs

DS1 SERVICE COST ANALYSIS

1 Channel Termination  
2 Channel Mileage Terminations  
6.8 Channel Miles

Cincinnati Bell Telephone Company

BY TRP FUNCTIONS

	FUNCTIONS	\$ Depreciation M	\$ Cost of Money N	FIT O	Administrative P	Maintenance Q	Recurring Direct Costs R	Rate S	No. of Units T	Charges (rate * unit) U	Nonrecurring Direct Costs V	Rate W	Charges (rate * unit) X
57	DS1 Equipment Installation -nrc												
58													
59													
60													
61													
62													
63	DS1 Equipment Installation -nrc total												
64													
65	DS1 Cross-Conn. -rec	\$1.19	\$0.99	\$0.69	\$1.72	\$0.61	\$5.20	\$6.45	1	\$6.45			
66													
67													
68													
69													
70													
71	DS1 Cross-Conn. -rec total	\$1.19	\$0.99	\$0.69	\$1.72	\$0.61	\$5.20			\$6.45	\$0.00		\$0.00
72													
73	DS1 Cross-Conn. -nrc												
74													
75													
76													
77													
78													
79	DS1 Cross-Conn. -nrc total												
80													
81	DS1 Maintenance & Repair -rec												
82													
83													
84													
85													
86													
87	DS1 Maintenance & Repair -rec total												
88													
89	DS1 Maintenance & Repair -nrc												
90													
91													
92													
93													
94													
95	DS1 Maintenance & Repair -nrc total												
96													
97	DS1 Technician Training -rec												
98													
99													
100													
101													
102													
103	DS1 Technician Training -rec total												
104													
105	DS1 Technician Training -nrc												
106													
107													
108													
109													
110													
111	DS1 Technician Training -nrc total												

Note: if M - Q do not apply, fill in R and explain in attachment what the amount in R includes.